

Before the  
**FEDERAL COMMUNICATIONS COMMISSION**  
Washington, DC 20554

In the Matter of	)	
	)	
Facilitating the Communications of Earth stations	)	IB Docket No. 18-315
in Motion with Non-Geostationary Orbit Space	)	
Stations	)	

**REPLY COMMENTS OF TELESAT CANADA**

Telesat Canada (“Telesat”) submits this reply in response to comments filed in respect of the above-referenced Federal Communications Commission (the “Commission”) Notice of Proposed Rulemaking (“NPRM”) to facilitate communications of earth stations in motion (“ESIMs”) with non-geostationary satellite orbit (“NGSO”), fixed-satellite service (“FSS”) systems.<sup>1</sup> Specifically, the Commission proposes to amend its rules to permit ESIMs to communicate with NGSO FSS systems consistent with its treatment of ESIMs that communicate with geostationary satellite orbit (GSO) FSS networks. These amendments will foster continued innovation and competition in rapidly growing satellite-based mobile connectivity markets and will ultimately benefit U.S. users.

The comments filed in response to the NPRM strongly support the Commission’s proposals. Telesat, along with The Boeing Company (“Boeing”), Kymeta Corporation, SES Americom, Inc. & O3b Limited (“SES/O3b”), Panasonic Avionics Corporation, WorldVu Satellites Limited (“OneWeb”) and Kepler Communications Inc. submitted joint comments as the “ESIM Coalition” concurring with the Commission’s proposals to allow ESIMs to communicate with NGSO FSS systems in the portions of the Ku-band and Ka-band in accordance with the Commission’s Rules regarding the relative status of NGSO and GSO FSS operations in the identified band segments. Separately, Viasat, Inc. and Echostar Satellite Operating Corporation and Hughes Networks Systems, LLC (“Hughes”) have filed comments indicating they support rule changes to facilitate the deployment of NGSO FSS ESIMs, subject

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<sup>1</sup> *Facilitating the Communications of Earth Stations in Motion with Non-Geostationary Orbit Space Stations*, Notice of Proposed Rulemaking, IB Docket No. 18-315, FCC 180-160 (rel. Nov. 16, 2018) (“NPRM”)

to ensuring sufficient protection of incumbent GSO Operations. Eutelsat S.A. also does not oppose rule changes to facilitate authorization of NGSO FSS ESIMs in the U.S. Finally, the National Academy of Sciences, through its Committee on Radio Frequencies likewise does not oppose rule changes to facilitate deployment of NGSO ESIMs, but seeks to ensure that passive scientific observations in adjacent bands are protected.

The Commission's proposals for NGSO ESIMs are consistent with Section 25.289 of the Commission's Rules<sup>2</sup> as well as Note NG165 of the U.S. Table of Frequency Allocations<sup>3</sup> and, along with properly crafted NGSO ESIM terminal monitoring and NCMC provisions that account for the specifics of NGSO systems, will ensure sufficient protection of other services, including incumbent GSO operations. In particular, the amended rules proposed by the Commission would allow both GSO and NGSO ESIMs to operate in portions of Ka-band and Ku-band where FSS GSO and NGSO allocations exist, and in accordance with the status of GSO and NGSO FSS in the relevant bands. Thus in the 18.8-19.3 GHz and 28.6-29.1 GHz bands where NGSO FSS has primary status relative to GSO FSS, GSO FSS operations must not claim protection from, and must not cause harmful interference to, NGSO FSS operations. In all other Ku-band and Ka-band segments proposed for NGSO FSS ESIMs, NGSO systems must protect GSO FSS networks from unacceptable interference including from NGSO ESIMs communications.

Hughes concurs with the Commission's approach in all band segments where GSO FSS operations must be protected by NGSO FSS, but in the limited band segments where NGSO FSS operations have primary status relative to GSO FSS operations, namely the 18.8-19.3 GHz and 28.6-29.1 GHz bands, suggests that NGSO FSS ESIMs should only be permitted "with an equal status to that of any GSO operation that takes place in the band" and that "the Commission should permit GSO and NGSO ESIMs to operate on a co-equal basis with each other". This request is outside the scope of the proceeding and, in any event, is inconsistent with the U.S. Table for Frequency Allocations and was recently and properly rejected by the Commission in its

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<sup>2</sup> 47 C.F.R. § 25.289. This provision states: "Unless otherwise provided in this chapter, an NGSO system licensee must not cause unacceptable interference to, or claim protection from, a GSO FSS or GSO BSS network."

<sup>3</sup> 47 C.F.R. § 2.106, Footnote NG165 (stating "In the bands 18.8-19.3 GHz and 28.6-29.1 GHz, the geostationary-satellite networks in the fixed-satellite service shall not cause harmful interference to, or claim protection from, non-geostationary-satellite systems in the fixed-satellite service.")

Report and Order in *Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters* (the ‘NGSO R&O’).<sup>4</sup>

GSO FSS is secondary to NGSO FSS in (and only in) the 18.-19.3 GHz and 28.6-29.1 GHz bands and, in fact, GSO FSS operations had *no* status of any kind in the 18.8-19.3 GHz band until the NGSO R&O. While Hughes urged the Commission to establish co-primary treatment for GSO FSS in the 18.8-19.3 GHz and 28.6-29.1 GHz bands in the NGSO R&O proceeding, the Commission expressly rejected this approach concluding that “preserving the 18.8-19.3 GHz and 28.6-29.1 GHz bands for more intensive use by burgeoning NGSO FSS systems will serve the public interest, particularly in light of our decision below to adopt a default presumption that NGSO systems must protect GSO FSS and GSO broadcast-satellite service (BSS) networks in other bands.”<sup>5</sup> Demand for mobile aeronautical, maritime and land services is one of the key drivers of the burgeoning NGSO demand for this spectrum. Furthermore, in determining that it would allow GSO FSS operations in the 18.8-19.3 GHz band, the Commission underscored repeatedly that GSO FSS operations in this band, as in the 28.6-29.1 GHz band, would be secondary and that GSO FSS operations in these bands would have no entitlement to protection from NGSO FSS systems:

14. ... Nonetheless, we agree with the consensus that GSO FSS networks should be given some access to this band, because doing so will increase spectrum use and can be done compatibly with NGSO FSS operations. We therefore will allow GSO FSS operations in the 18.8-19.3 GHz band on an unprotected, non-interference basis to NGSO FSS systems.

...

16. Finally, we reject Echostar’s suggestion that we must adopt a “default mechanism in the event that NGSO FSS operators and GSO FSS operators do not reach an agreement on how protection of the NGSO system in the 18.8-19.3 GHz and 28.6-29.1 GHz bands will be achieved. The status of GSO FSS operations in these bands is secondary. They are entitled to no protection from any interference caused by NGSO FSS systems. ... (emphasis added)<sup>6</sup>

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<sup>4</sup> *In the Matter of Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters*, IB Docket No. 16-408, FCC 17-122 (Rel. September 27, 2017) (the ‘NGSO R&O’)

<sup>5</sup> NGSO R&O, para. 14

<sup>6</sup> NGSO R&O, paras. 14 and 16

Hughes' request to amend the U.S. Table of Frequency Allocations and for protection of GSO operations in the 18.8-19.3 GHz and 28.6-29.1 GHz bands is therefore both procedurally and substantively flawed. As the Commission recently determined in the NGSO R&O, it is in the public interest to preserve the 18.8-19.3 GHz and 28.6-29.1 GHz bands for innovative new NGSO systems. Accordingly, GSO operations in these bands are not entitled to any protection from interference caused by NGSO FSS systems, including from NGSO FSS ESIMs.

In addition to supporting the Commission's proposals, several parties have proposed that the Commission consider permitting NGSO ESIMs communications in additional frequency bands. In this regard, Telesat agrees with the proposals by Boeing and SES/O3b that the Commission issue a further notice of proposed rulemaking to consider permitting NGSO ESIMs in portions of V-band that are allocated to FSS. However, Telesat opposes OneWeb's proposal that the Ku-band frequencies considered in this proceeding for NGSO ESIMs be expanded to include the 12.2-12.7 GHz band. The 12.2-12.7 GHz band is a broadcasting-satellite service downlink band with no allocation to FSS and is outside the scope of the NPRM.

For these reasons and those set out in the ESIM Coalition comments, Telesat urges the Commission to adopt its proposals in the NPRM. In so doing, the Commission will provide important certainty to NGSO operators and facilitate the deployment of innovative new NGSO FSS services to mobile markets in the air, at sea and on land, for the benefit of U.S. consumers of these services.

Respectfully submitted,

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